QF-450

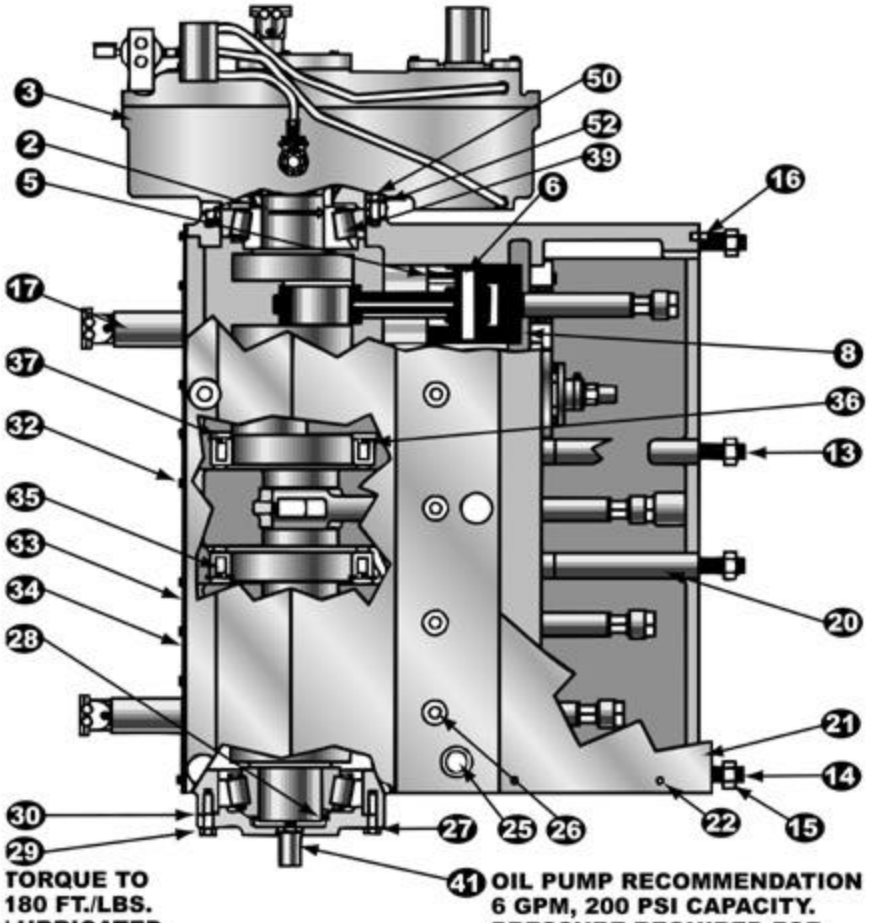
70-40100-001 Power End Parts

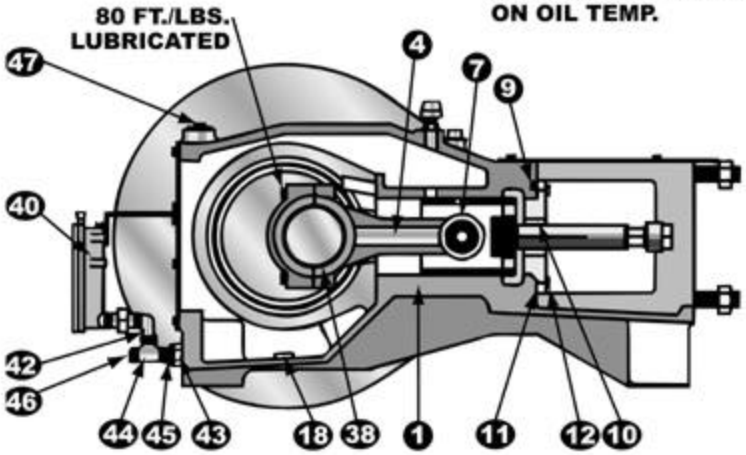
10 - 20 KPSI MAWP

GENERAL ASSEMBLY INSTRUCTIONS

1. TORQUE ITEM #50
   50 TO 150 FT./ LBS. LUBRICATED.
   TORQUE EVENLY AND
   ALTERNATELY TO ENSURE
   EVEN LOADING.
2. INSERT ITEM #51 THROUGH 1/8"
   DIA. HOLE IN HEX. HEAD BOLT
   THREAD THROUGH THE HEX.
   HEAD BOLT LOCATED 60° TO
   RIGHT WITH ITEM #51 ONLY
   TWO (2) BOLTS PER STRAND
   LOCKED TOGETHER.

POWER END AND GEAR BOX OIL:
EXXON SPARTAN EP-150 OIL.
POWER END OIL CAPACITY: 12 GAL.
GEAR BOX OIL CAPACITY: 2.5 GAL.





70-40100-001 Power End Parts

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10 - 20 KPSI MAWP

ITEM	PART NO.	QUAN.	DESCRIPTION:
1	70-40001	1	POWER FRAME
5	16-15440	5	SCREW, 1/2" - 13 x 1/2", HALF DOG SET
6	16-15439-001	5	SCREW, 1/2" - 13 x 1/2", LOCK, CUP POINT SET
8	70-20003	5	CROSSHEAD
9	22-20015	5	O-RING, 6-1/4", 2-258-70
10	22-20002	15	SEAL, OIL
11	70-20009	5	PLATE, DIAPHRAGM SEAL
12	16-75658	10	SCREW, SHC, 1/2" - 13 x 1-1/14"
13	16-77927	2	STUD, 1-1/4" - 7 x 17-1/2"
14	16-77928	6	STUD, 1-1/4" - 7 x 6-1/2"
15	16-15441	8	NUT, HEX, 1-1/4" - 7
16	16-15442	2	PIN, 1/2" x 1-1/2" DOWEL
17	16-07035	2	BRACKET, OIL GAUGE SUPPORT
18	70-02355	10	MAGNET
20	70-40015	2	SPACER, BOLT
21	70-40010	1	COVER, WELL
22	16-15025	4	BOLT, HXHD, 1/4" - 20 x 1/2"
23	70-75515	2	BREATHER
24	19-32023-001	1	BUSHING, 3/4" x 1/2"
25	19-00370	2	PLUG, 1-1/2"
26	19-33283	4	PLUG, 3/4"
27	16-15056	6	BOLT, HXHD, 3/4" - 10 x 2-1/2"
28	22-20001	1	SEAL, CRANKSHAFT OIL
30	22-40005	2	SHIM SET
32	16-15212	28	BOLT, HXHD, 3/8" - 16 x 3/4"
33	70-40011	1	COVER,CRANKCASE
34	22-40003	1	GASKET, CRANKCASE COVER
35	52-40044	2	BEARING
36	16-40004	2	RING, INTERNAL RETAINING
37	16-40003	2	RING, EXTERNAL RETAINING
39	52-40042	2	BEARING, CRANKSHAFT
40	37-77063	2	INDICATOR, OIL LEVEL
42	19-32020	2	ELL, 1/2" STREET
43	19-33220	2	BUSHING, 1" x 1/2"
44	19-00354	2	TEE, 1/2"
45	19-33272	2	NIPPLE, 1/2" CLOSE
46	19-32031	2	PLUG, 1/2"
47	19-77014	1	PLUG, 1"

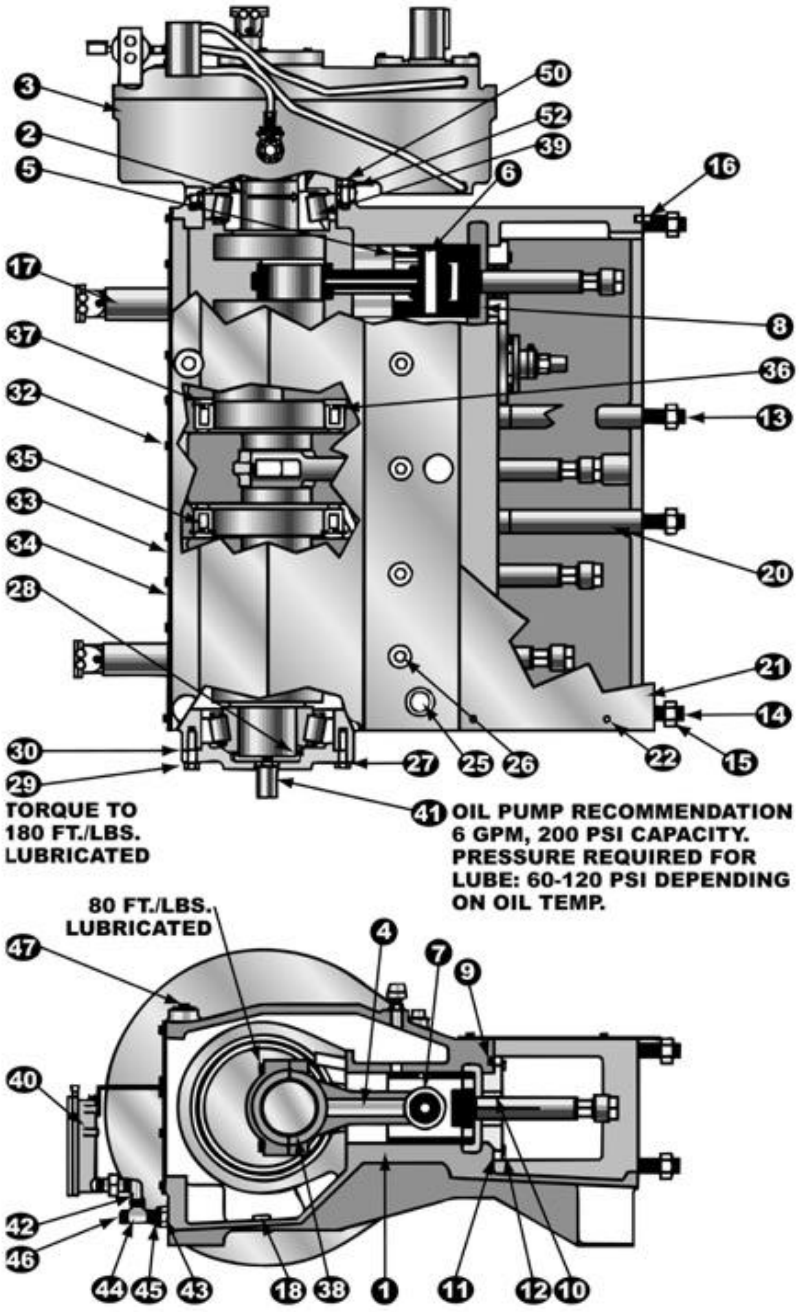
QF-450

70-40100-001 Power End Parts

10 - 20 KPSI MAWP

GENERAL ASSEMBLY INSTRUCTIONS

1. TORQUE ITEM #50
   50 TO 150 FT./ LBS. LUBRICATED.
   TORQUE EVENLY AND
   ALTERNATELY TO ENSURE
   EVEN LOADING.
2. INSERT ITEM #51 THROUGH 1/8"
   DIA. HOLE IN HEX. HEAD BOLT
   THREAD THROUGH THE HEX.
   HEAD BOLT LOCATED 60° TO
   RIGHT WITH ITEM #51 ONLY
   TWO (2) BOLTS PER STRAND
   LOCKED TOGETHER.



POWER END AND GEAR BOX OIL:
EXXON SPARTAN EP-150 OIL.
POWER END OIL CAPACITY: 12 GAL.
GEAR BOX OIL CAPACITY: 2.5 GAL.

CLEARANCE CHART

ITEM 2 CRANKSHAFT AND ITEM 38 CONN. ROD BEARING I.D.	0.004 - 0.009
ITEM 4 CONN. ROD I.D. AND ITEM 7 CROSSHEAD PIN O.D.	0.0050 - 0.0070
ITEM 8 CROSSHEAD I.D. AND ITEM 7 CROSSHEAD PIN O.D.	0.0005 - 0.0023
ITEM 8 CROSSHEAD O.D. AND ITEM 1 POWER FRAME BORE	0.007 - 0.012
CRANKSHAFT END PLAY	0.002 - 0.005

70-40100-001 Power End Parts

QF-450

10 - 20 KPSI MAWP

POWER END WITH 3.542:1 RATIO
(FORCED OIL)

ITEM	PART NO.	QTY.	DESCRIPTION:
2	70-40002-100	1	CRANKSHAFT, FORCED OIL
3	70-40070-354	1	GEAR REDUCER ASSEMBLY
4	70-20004-100	5	ROD, FORCED OIL CONNECTING
7	70-45006	5	PIN, CROSSHEAD
29	70-40008-100	1	CAP, FORCED OIL SEAL END
38	70-20021-100	5	BEARING, FORCED OIL CONNECTING ROD
41	35-40242	1	UNION, 3/8" DEUBLIN
50	16-15058-001	6	BOLT, HEX HEAD, GR8, 3/4" - 10 (DRILLED)
51	16-78525	3	WIRE, BOLT LOCKING, .047" DIA.
52	16-40005	6	WASHER, 3/4" STAR

POWER END WITH 4.143:1 RATIO
(FORCED OIL)

ITEM	PART NO.	QTY.	DESCRIPTION:
2	70-40002-100	1	CRANKSHAFT, FORCED OIL
3	70-40070-414	1	GEAR REDUCER ASSEMBLY
4	70-20004-100	5	ROD, FORCED OIL CONNECTING
7	70-45006	5	PIN, CROSSHEAD
29	70-40008-100	1	CAP, FORCED OIL SEAL END
38	70-20021-100	5	BEARING, FORCED OIL CONNECTING ROD
41	35-40242	1	UNION, 3/8" DEUBLIN
50	16-15058-001	6	BOLT, HX HD, GR8, 3/4" - 10 (DRILLED)
51	16-78525	3	WIRE, BOLT LOCKING,.047" DIA.
52	16-40005	6	WASHER, 3/4" STAR

POWER END WITH 4.737:1 RATIO
(FORCED OIL)

ITEM	PART NO.	QTY.	DESCRIPTION:
2	70-40002-100	1	CRANKSHAFT, FORCED OIL
3	70-40070-474	1	GEAR REDUCER ASSEMBLY
4	70-20004-100	5	ROD, FORCED OIL CONNECTING
7	70-45006	5	PIN, CROSSHEAD
29	70-40008-100	1	CAP, FORCED OIL SEAL END
38	70-20021-100	5	BEARING, FORCED OIL CONNECTING ROD
41	35-40242	1	UNION, 3/8" DEUBLIN
50	16-15058-001	6	BOLT, HX HD, GR 8, 3/4" - 10 (DRILLED)
51	16-78525	3	WIRE, BOLT LOCKING, .047" DIA.
52	16-40005	6	WASHER, 3/4" STAR

POWER END WITH NO GEAR BOX
(FORCED OIL)

ITEM	PART NO.	QTY.	DESCRIPTION:
2	70-40002-100	1	CRANKSHAFT, FORCED OIL
4	70-20004-100	5	ROD, FORCED OIL CONNECTING
7	70-45006	5	PIN, CROSSHEAD
29	70-40008-100	1	CAP, FORCED OIL SEAL END
38	70-20021-100	5	BEARING, FORCED OIL CONNECTING ROD
41	35-40242	1	UNION, 3/8" DEUBLIN
48	22-20001	1	SEAL, CRANKSHAFT OIL
49	70-40008-001	1	CAP, SEAL END
50	16-15058-001	6	BOLT, HX HD, GR 8, 3/4" - 10 (DRILLED)
51	16-78525	3	WIRE, BOLT LOCKING, .047" DIP
52	16-40005	6	WASHER, 3/4" STAR